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Pinning hopes on American chestnuts: Cross-pollinated seedlings from Farmington tree growing in effort to reintroduce majestic giant

By DANIELLE CURTIS
dcurtis@fosters.com
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FARMINGTON — The seedlings of a cross-pollinated local American chestnut tree have grown into small trees up to 10 feet tall. This is part of a project to make the once common tree more resistant to a fungus, nearly killing them off in the country in the early 20th century.

In July 2007, the American Chestnut Foundation introduced pollen from a chestnut tree in Tennessee resistant to the fungus, known as Asian blight, to cross-pollinate a healthy chestnut tree found on the 125-acre property of Bill and Nancy Yates, located on Chestnut Hill Road.

The 154 viable nuts produced by the cross-pollinated tree were then taken to Shieling State Forest in Peterborough in May 2008, where 100 of them were planted. By September 2008, 87 of the plants produced by the Farmington tree were still alive.

According to Kendra Gurney, ACF's New England Science Coordinator, 118 of the 139 seedlings planted in the Shieling State Forest, and other areas, from nuts of the Farmington tree are surviving and are doing well, with an average height of about eight to 10 feet.

The trees are part of the fourth generation of trees planted as part of the ACF's ongoing efforts to repopulate the country with chestnut trees.

According to Gurney, Asian blight was introduced to the United States in the late 1800s when it was likely carried into the country on an infected tree. The first known case appeared in New York City in 1904, reaching New Hampshire and Vermont by the 1920s.

The blight, which is carried on the wind and on small animals, affects the living tissues under the bark of a tree, getting in through natural cracks in the bark or at any site of injury to the tree.

According to Gurney, the repopulation project began about 30 years ago with the creation of the ACF, and has been ongoing ever since. The process will go through six generations of trees that are bred to become more and more resistant to the Asian blight with each generation.

Trees that are used in the program, like the Farmington tree, are chosen based on their level of resistance to the blight and how similar they are to the American chestnut. The best trees, Gurney said, are those that are native, meaning they are growing where they would naturally.

Once a tree is cross-pollinated and its seeds have grown into trees about 3 inches in diameter, the blight is introduced to the trees to see how resistant they are. The most resistant trees are then cross-pollinated, producing their own nuts and their own seedlings, creating a more resistant tree with each generation.

The trees produced from the Farmington chestnut are fourth generation trees that will produce fifth generation nuts and seedlings, Gurney said, although this will not happen for a few years.

Gurney expects the small trees to grow large enough to test with blight in about two to three years, with cross-pollination of the trees coming within five years.

It is a long process, she said, but something she and other members of the ACF find worthy of the



This small chestnut tree is part of a large project to repopulate the species in the area using nuts from a Farmington tree. Courtesy photo

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"The America chestnut is a keystone species," Gurney said. "It provided valuable food for wildlife, its nuts are highly nutritious."

The trees' wood is also a valuable building tool, she said, being straight-grained and highly resistant to rotting.

"It would bring back a lot of ecological function to the forest to have it back," Gurney said of the tree.

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